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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

Division of Mycology and Disease Survey
BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING
AGRICULTURAL RESEARCH ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE

SUPPLEMENT 177

SOME UNUSUAL OR OUTSTANDING PLANT DISEASE DEVELOPMENTS IN THE UNITED STATES IN 1947

Supplement 177 October 15, 1948

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

PLANT DISEASE REPORTER SUPPLEMENT

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THE PLANT DISEASE SURVEY
DIVISION OF MYCOLOGY AND DISEASE SURVEY

Plant Industry Station Beltsville, Maryland

SOME UNUSUAL OR OUTSTANDING PLANT DISEASE DEVELOPMENTS IN THE UNITED STATES IN 1947

Compiled by Nellie W. Nance

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This summary of the incidence of some unusual or outstanding plant disease developments in the United States has for the most part been taken from reports to the Plant Disease Survey. No attempt has been made to make it a complete record of plant disease occurrence during the year.

Since weather conditions play an important role in the development and distribution of plant diseases, it seems desirable to give a brief review of the weather of 1947 in the United States (Monthly Weather Review, December 1947).

Temperatures. The mean temperature for the year, derived by weighting the average temperatures of the different States according to their areas, was slightly above the average for the period 1886 to 1947. Temperatures averaged about normal for the year over most of the country, ranging from somewhat above normal in Florida and New England to considerably above in the extreme Northwest, and registering somewhat below in large areas of the Ohio Valley and South Central States. Annual averages were as much as 2 to 4 degrees above normal in western Washington and northern Oregon. For the year's highest temperature, Cow Creek, California recorded 126° F., on July 19, a figure 8° below the all-time high. The lowest temperature of -43° F. was recorded at Gavilin, N. Mex. (7,350 feet elevation), on January 16, a reading of 23° above the all-time low. (Figure 3)

An interesting pattern is presented by the variation of 1947 temperatures from the normal. In January they averaged above normal in the East, below in the West, although the reverse was true for February through May, inclusive. June temperatures averaged above normal for the southern one-third of the country and below normal for the northern two-thirds.

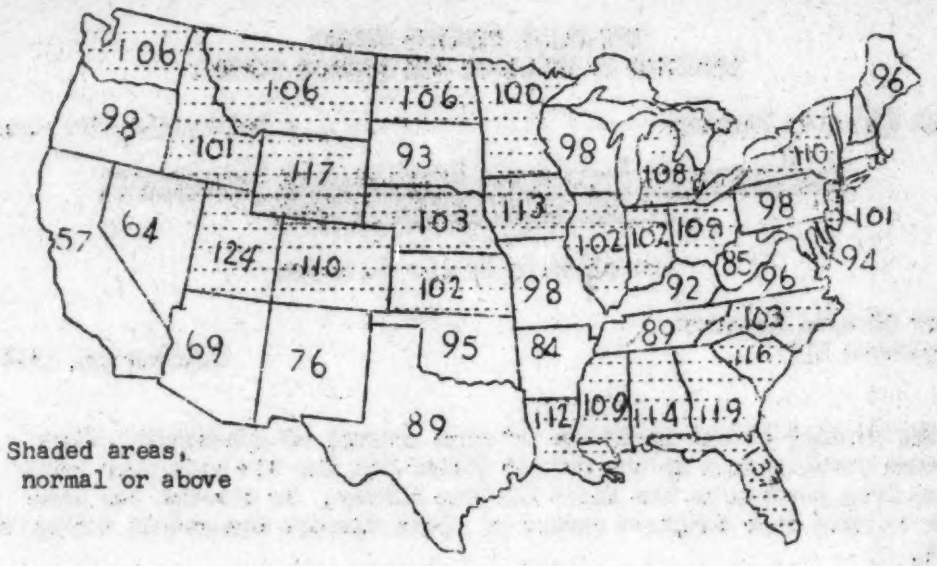

Figure 1. Percentage of normal precipitation for the year 1947.

Geographic distribution changed in July, with the western two-thirds of the country experiencing above-normal heating while the eastern one-third average was below normal. For the next three months averages were generally above normal, dropping to below in November and rising again to above normal in December.

Precipitation. The average annual precipitation for the country as a whole, based on weighted averages, was 28.78 inches, 0.39 inch less than the average for the period 1886 to 1947, or very near the normal. Figure 1 gives the percentages of normal precipitation by States for 1947. Figure 2, the percentages for the growing season. The areal distribution of the percentages of normal is presented by a chart which shows a rather broad belt of above-normal precipitation, extending from New England westward to the central Rockies, thence northwestward through western Montana, northern Idaho and northern Washington. Another belt of above-normal amounts included the coastal areas from eastern Texas to central Virginia. Precipitation was only one-fourth to three-fourths of normal in California, Nevada, Arizona and New Mexico.

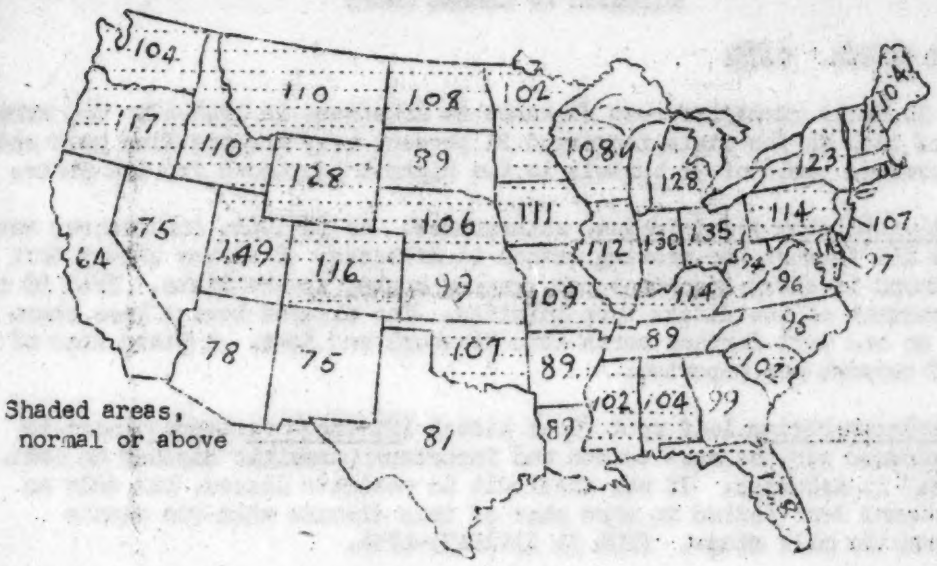

Figure 2. Percentage of normal precipitation, April 1 - September 30, 1947

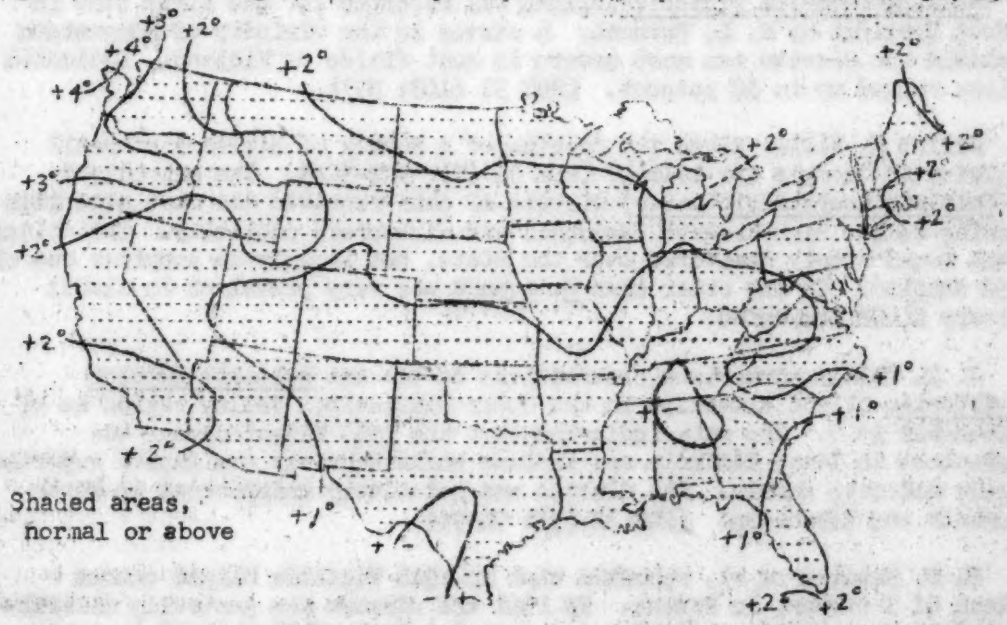

Figure 3. Departure of mean temperature from normal for the year 1947. (Weekly Weather and Crop Bulletin January 6, 1948)

DISEASES OF CEREAL CROPS

AVENA SATIVA. OATS:

H. R. Rosen summarized oat diseases in Arkansas, in 1946-47. The acreage of oats in the State increased 21 percent over the previous year and the average yield of 31 bushels is the highest on record for the State.

Colletotrichum graminicolum, anthracnose. As in 1946, anthracnose was noted all through the growing season in Arkansas. A survey showed that it was found in every important oat growing county in the State. From 50 to 100 percent of the plants were infected. The disease became less abundant as one went farther north into Missouri and Iowa. A State loss of 5 to 10 percent was reported.

Helminthosporium leaf spot (leaf blotch (Pyrenophora avenae)) next to anthracnose was the most common and important parasitic disease on oats in 1947 in Arkansas. It was difficult to estimate losses, but only an occasional leaf failed to show some of this disease when the plants reached the milk stage. (PDR 31 (12):471-475).

Helminthosporium victoriae, blight, was reported for the first time in West Virginia by H. L. Barnett. A survey in the vicinity of Morgantown showed the disease was most severe in most fields of Vicland. Estimated loss ranged up to 50 percent. (PDR 31 (10): 397).

Julian H. Miller gives the results of a survey of diseases of small grains in Georgia for 1946-47 (PDR 31 (8): 303-308). The new blight (Helminthosporium victoriae) disease of oats received the most attention owing to its high disease incidence and widespread publicity. This blight was found widely scattered over the State, but in only 16 counties out of 32 sampled. On the other hand H. avenae was very prevalent in almost every field inspected.

J. R. Wallin summarized observations on the oat Helminthosporium victoriae blight situation in the Upper Mississippi Valley region as of December 1947. The data indicated that the 1947 blight damage was greatest in Iowa, Illinois and Indiana while Nebraska and Kansas reported only moderate damage. The disease was relatively unimportant in North Dakota and Wisconsin. (PDR 32 (3): 94-96).

E. D. Hansing et al. reported that in 1946 Victoria blight caused a loss of 1 percent in Kansas. In 1947 the disease was generally distributed on susceptible varieties and caused a loss of 30 percent in northeastern Kansas, 20 percent in southeastern Kansas, 5 percent in central Kansas, and a trace in western Kansas. Osage, Neosho, Boone, and Tama were susceptible, while Kanota and Fulton were resistant, Cherokee, Nemaha, and Clinton were recommended for 1948. These are resistant to Victoria blight, smut, and the crown and stem rust races found commonly

in Kansas. Victoria blight was favored by high soil temperatures (optimum 22° to 26° C.) and by moderately high moisture. Seed treatment was effective in controlling the disease in sterile soil, but only partially effective in infested soil. Crop rotation was partially effective in controlling Victoria blight. In eastern Kansas, when susceptible oat varieties were preceded by the following crops, percentages of loss occurred as follows: susceptible oat varieties, 38; corn, 27; clover and meadow, 26; soybeans, 24, wheat 18; and resistant oats, 4. (Phytopath. 38 (1): 12)

I. M. Atkins reported blight was severe in the breeding nursery at Denton, Texas, so that excellent information on the reaction of oat strains was obtained. (PDR 31 (9): 321).

Puccinia coronata, crown rust, was of minor importance in commercial fields around Denton, Texas and very little was observed in West Texas. (I. M. Atkins, PDR 31 (9): 321)

Sclerospora macrospora, downy mildew, was reported by W. E. Cooper on oats in Louisiana in late May. This constitutes the first report of the disease in this State. (PDR 31 (7): 270)

Winter killing. I. M. Atkins estimated that loss from winter killing of oats by the January 1947 freeze was approximately 80 percent in the area from Denton, Texas eastward to Greenville and south as far as Hill County. This area grew 350,000 acres in 1939. The Rolling Plains area covering an acreage of perhaps 500,000 or more was damaged from a trace to as much 60 percent. An average estimate of 30 percent was made. (PDR 31 (5): 213-214)

HORDEUM VULGARE. BARLEY:

Erysiphe graminis, powdery mildew, was severe on barley in Virginia. Wong and a few other resistant varieties showed very little or no powdery mildew. (S. B. Fenne PDR 31 (7): 281)

Rhynchosporium secalis, scald, according to H. L. Barnett in West Virginia, was found on some varieties in the barley variety trial plots at the University Agronomy Farm at Morgantown. He found no previous report on barley from West Virginia. (PDR 31 (10): 397). R. S. Kirby reported scald found in a field of winter barley in Lebanon County Pennsylvania on May 29. This is a new disease for Pennsylvania. (PDR 31 (7): 271)

Ustilago nuda, loose smut. An unusual amount of loose smut was observed on barley this spring in Virginia. Five percent infection was reported by S. B. Fenne. (PDR 31 (7): 281)

ORYZA SATIVA. RICE:

Ophiobolus oryzinus, black sheath rot. Tullis and Adair reported black sheath rot caused lodging of rice in Drew County, Arkansas, in 1946 and 1947 and in Harris County, Texas in 1947. Examination of a variety test in a field in Arkansas showed that eight named varieties were more resistant than other varieties in the test.

In Texas, the disease also was found in a variety test field. The symptoms were the same as in the Arkansas field in that the infection had caused breaking at the nodes, and only the fungus O. oryzinus was found on the diseased plants. (PDR 31 (12): 468)

Seedling blight. E. C. Tullis reported there were many reports of failure of rice stands in Arkansas and Texas. Blighted seedlings from Arkansas were attacked by Fusarium. Others from Texas were attacked by species of Aspergillus. Seed treatment was advised to avoid these losses. (PDR 31 (7): 28C)

TRITICUM AESTIVUM. WHEAT:

Erysiphe graminis var. tritici, powdery mildew, was unusually severe on wheat in most parts of Virginia with 10 percent infection in many fields. (S. B. Fenne PDR 31 (7): 281). In Kansas powdery mildew was general and very severe according to C. O. Johnston. The long cool wet spring favored the widespread development of the disease (PDR 31 (9): 323)

Gibberella zeae, scab. According to C. O. Johnston scab was favored by the long cool wet spring in Kansas. There were unusually heavy infections in the eastern part of the State. (PDR 31 (9): 323)

Puccinia rubigo-vera var. tritici, leaf rust. According to I. M. Atkins, leaf rust was slow in developing in Texas in the spring, but before maturity it gave excellent readings on all breeding material. Because of the recent increase in new races of rust, it seemed that many strains which previously appeared promising will have to be discarded. (PDR 31 (9): 321). K. Starr Chester and D. A. Preston made an experimental forecast of wheat leaf rust in Oklahoma for 1947. The proposed basis for forecasting wheat leaf rust destructiveness is based on conditions as of April 1. The 1946 forecast was for late rust, somewhat heavier than in a "normal year", but not reaching the epiphytotic destructiveness of 1938 or 1945. This proved to be the case. By April 1, 1947 rust was generally very much lighter than at the same time in 1946, and no rust carryover from the fall epiphytotic was noted. Their conclusion that 1947 in Oklahoma would be no more than a normal leaf rust year, was borne out by the development of the disease during the season. (PDR 31 (5): 201-203). They stated (PDR 32 (5): 176-181) that the lighter-than-

normal occurrence of leaf rust in 1947 extended to wheat fields far to the north. They quoted D. G. Fletcher as reporting only light to moderate leaf rust in the Dakotas and western Minnesota and further summarizing the situation for the wheat belt as a whole by saying "1947 will go down in the records as a non-rust year. Leaf rust in certain areas developed in epidemic form but usually too late to cause severe damage."

C. O. Johnston reported that the fall of 1946 was an unusually wet one in most of Kansas but especially in western counties. As a consequence there was a rank growth of volunteer and early sown wheat. By mid-October, this wheat was heavily infected with leaf rust. The rust disappeared during the late winter of 1946-47 and was late in its appearance and development the following spring. The 1947 crop therefore developed with the lightest infections of leaf and stem rust observed in many years. Thus the 1947 Kansas bumper crop was produced without rust damage. (PDR 32 (7): 290-291)

R. E. Atkinson reported a trip was made on April 16 to the southeastern corner of Colorado to check up on the survival of leaf rust. Overwintering was very rare as no more than a trace was observed in any field. (PDR 31 (6): 244)

Sclerospora macrospora, downy mildew, was reported by G. C. Kent et al. at Ithaca, New York. About 30 infected plants were found within an area 25 x 5 feet in a low wet portion of the field. The disease was also found at Perry, New York (PDR 31 (9): 320). This constitutes the first report from this State.

Septoria tritici, speckled leaf blotch, was unusually severe in Kansas. The heaviest infection seemed to be in a strip about three counties wide along the entire southern border of the State. (C. O. Johnston PDR 31 (9): 323). Speckled leaf blotch was the most prevalent disease on winter wheat in southeastern Colorado according to R. E. Atkinson. (PDR 31 (6): 244)

Ustilago tritici, loose smut. An unusual amount of loose smut was observed on wheat this spring in Virginia. Some varieties had as much as 8 percent loose smut. (S. B. Fenne, PDR 31(7): 281).

Wheat mosaic (virus), which was prevalent last year was observed in trace amounts in southeastern Colorado according to R. E. Atkinson. (PDR 31 (6): 244)

DISEASES OF FORAGE AND COVER CROPS

LUPINUS ANGUSTIFOLIUS. BLUE LUPINE:

Ceratophorum setosum, leaf spot, was reported found near Perry, Georgia, in December, 1947 by J. L. Weimer. This is the first report of this disease on lupine in the United States. This fungus causes a leaf spot on many species of lupine in Europe, Ceylon and Brazil. The fungus is seed-borne which he states may account for its wide distribution. (PDR 32 (4): 133)

Coyt Wilson reported anthracnose (Colletotrichum sp., probably Glomerella cingulata) in many fields of blue lupine in southern Alabama. The disease was not observed until after May 1. In many fields all plants were infected and in some as much as 90 percent of the seed had been destroyed. This seems to be the first time anthracnose had occurred on cultivated lupines in sufficient amounts to attract attention. The greatest threat appeared to be to the seed crop. The seed is grown locally in southern Alabama with much ease; and any disease which reduces the seed crop is serious. (PDR 31 (7): 270). At harvest time, according to Phares Decker, anthracnose (Glomerella cingulata) was prevalent in some lupine fields in southern Alabama and Georgia and in northwest Florida. Certain seed lots contained as much as 10 percent infected seed harvested from these fields. It was proved that these anthracnose infected seed can serve as a source of inoculum in the fall lupine plantings. (PDR 31 (12): 486)

MEDICAGO SATIVA. ALFALFA:

Corynebacterium insidiosum, bacterial wilt, was found in Shenandoah, Montgomery and Botetourt Counties, Virginia during the week of April 14. Previously, this disease had been found only in Shenandoah and Montgomery Counties. (S. B. Fenne et al. PDR 31 (8): 302)

Peronospora trifoliorum, downy mildew, was observed rather generally distributed in new stands of alfalfa in Virginia. (S.B. Fenne et al. PDR 31 (8): 302)

Sclerotinia trifoliorum, stem rot, was seen in one field of alfalfa in Culpeper County, Virginia, and in the experimental plots at Blacksburg. There was little evidence of stem rot in the Valley Counties. In the eastern part of the State stem rot is the most serious diseases of alfalfa, and kills some 20 to 50 percent of the stands in many instances. (S. B. Fenne et al. PDR 31 (8): 302)

Winter injury. S. B. Fenne reported extensive damage and total losses in some cases have occurred in alfalfa fields in Northern Virginia. (PDR 31 (7): 281)

PHLEUM PRATENSE. TIMOTHY:

Urocystis agropyri, stripe smut. K. W. Kreitlow reported stripe smut of timothy in the northeastern United States is commonly caused by Ustilago striiformis (West.) Niessl. In the fall of 1944, Kreitlow and Cassel collected a smut on timothy near Brandon, Vermont, that was indistinguishable macroscopically from U. striiformis, but when spores of the smut were examined with a microscope they were found to consist of spore balls resembling those of Urocystis agropyri (Preuss) Schroet. No previous report of this fungus on Phleum pratense was found. Collections of smutted timothy were made in 1946 and 1947. One collection obtained near Walpole, New Hampshire proved to be U. agropyri. (Phytopath. 38 (2): 158-159)

SOJA MAX. SOYBEAN:

Diaporthe phaseolorum var. sojae, pod and stem blight was observed in two counties in Ohio in 1947 according to T. H. King. The blight was found affecting the Mandel variety of soybeans in a field in Defiance County on August 30. On September 12, the blight was found in a 21-acre field of Manchu soybeans in Delaware County. Within an area of 30 feet in diameter all the plants were dead and the fungus was found fruiting profusely on these plants and was spreading rapidly to the adjacent plants. (PDR 32 (5): 193)

Phyllosticta glycineum, leaf spot, caused an appreciable amount of defoliation of soybeans in southeastern Missouri during August 1947 according to James M. Crall. (PDR 32 (5): 184-186)

TRIFOLIUM SPP. CLOVER:

Botrytis anthophila, anther mold. John R. Hardison reported that in August one Ladino clover plant (T. repens var. Ladino) was found near Grants Pass, Oregon which contained the typical clover anther mold B. anthophila. This was the only specimen found in several thousand flowers examined. This appears to be the first record of clover anther mold caused by B. anthophila in the United States, and also is apparently the first record of the disease anywhere on Ladino clover. (PDR 32 (6): 242)

Winter injury. S. B. Fenne reported extensive damage and total losses in some cases in clover fields in Northern Virginia. Away from protected areas 75 to 90 percent of the clover was killed. (PDR 31 (7): 281)

Heterodera marioni, root knot, was observed to be causing severe injury in one field of T. pratense in Botetourt County, Virginia, according to S. B. Fenne et al. Plants in spots 5 to 10 feet in diameter were dying or had been killed. (PDR 31 (8): 302)

VIGNA SINENSIS. COWPEA:

According to G. H. Boewe bacterial canker (Xanthomonas vignicola) of cowpea, new to the State of Illinois, was collected in September, in Calhoun County in southwest-central Illinois. Approximately 0.5 percent of the plants in a six-acre field were diseased. No pods were present on the diseased plants. (PDR 32 (6): 275)

AGROPYRON REPENS. QUACKGRASS:

Physoderma sp. was reported on quackgrass, Agropyron repens by Thirumalachar and Dickson in Wisconsin. Basal rotting of the culm and wilting and dying out of the leaves occurs in the case of the more severe infection. In external appearance the symptoms simulate those of downy mildew on the grasses. This disease is new for Wisconsin and so far as can be determined this is the first report of this fungus in North America. (Phytopath. 37 (12): 885)

Roderick Sprague reported nearly 4 percent of all fungi isolated from the roots of Gramineae in the northern part of the western United States were Rhizoctonia solani. Symptoms included seed, root, stem, and culm rots. Inoculations in the greenhouse at Mandan, North Dakota, and at Pullman, Washington during 1940 to 1947 inclusive disclosed that five races of this species were recognizable by differences in their attacks on cereal and cover crops. (Phytopath. 37 (11): 846 [abs.])

DISEASES OF VEGETABLE CROPS

ALLIUM ASCALONICUM. SHALLOT:

Peronospora destructor, downy mildew, appeared on shallots in 1947, in Louisiana but was not so widespread or destructive as in the spring of 1946. Many of the seedling progenies were lost in the breeding plots. (PDR 31 (10): 386-387)

ALLIUM CEPA. ONION:

Peronospora destructor, downy mildew, appeared in Southern Louisiana in a widespread and destructive form. Few seed of the Creole variety were saved. Since this variety makes up the bulk of onions grown in the State, the loss from mildew was serious. (E. C. Tims. PDR 31 (10): 386)

APIUM GRAVEOLENS. CELERY:

Mosaic (Virus). According to G. R. Townsend mosaic of celery in the Florida Everglades did not assume critical importance until 1938 when heavy losses occurred in some of the older fields. The association of

weeds in the celery fields is related to the severe outbreaks. The most outstanding weed host for carrying this virus seems to be Commelina longicaulis. A program of weed control was started in 1944. This program has been aided by the use of 2,4-D sprays in the last two years. One farm of 200 acres lost less than one percent of the crop to mosaic. On nearby weedy farms 100 percent infection had occurred. (PDR 31 (3): 118-119)

BRASSICA OLERACEAE VAR. CAPITATA. CABBAGE:

Phoma lingam, Blackleg. "For more than twenty years the Puget Sound area of western Washington has been this nation's chief producer of cabbage seed, primarily because seed grown there has not been known to carry the blackleg (Phoma lingam) and blackrot (Xanthomonas campestris) organisms. Such seed has been used commonly without hot-water treatment because of this known freedom from infection, although a mildly pathogenic strain of P. lingam has been recorded recently from that area. In 1947 a severe epidemic of blackleg occurred in most cabbage-producing sections of the country. Extensive field surveys indicated transmission from Puget Sound seed. Isolations have been made from several seed lots grown in the Puget Sound area in 1946 and P. lingam has been repeatedly isolated from 4 lots, representing a growing area 200 miles in length. Koch's posulates have been repeatedly applied to isolates obtained, establishing proof of blackleg transmission on Puget Sound seed. Certain isolates obtained from seed show cultural and pathogenic characteristics of the mild strain described from the Puget Sound area, while other isolates are typical of virulent eastern strains. This suggests a probable increase in pathogenicity of the Puget Sound strain and renders use of seed grown there without hot-water treatment unreliable." (Pound and Calvert. Phytopath. 38 (1): 21 [Abs.])

CAPSICUM FRUTESCENS VAR. LONGUM. CHILE PEPPER:

Phytophthora capsici, blight, reached epiphytotic proportions in ten days during August in the chile pepper fields of southern New Mexico. Approximately 50 to 60 percent of the green fruit became infected during the ten-day epiphytotic. A total precipitation of 2.17 inches during the ten-day period was considered very unusual. (Philip J. Leyendecker, PDR 31 (11): 421-422)

CUCURBITS. CUCUMBER, MELON:

Pseudoperonospora cubensis, cucurbit downy mildew. A summary of cucurbit downy mildew reports from the Atlantic Coastal States in 1947 was sent in by C. J. Nusbaum. He states "For the seventh consecutive season a cooperative reporting service on cucurbit downy mildew in the Atlantic coastal areas was conducted with the view of furthering the development of an organized forecasting system for this disease. Cooperating pathologists in nine States from Florida to Massachusetts submitted a total

of 26 timely reports upon the establishment and spread of downy mildew in relation to the development of cucurbit crops and the climatic conditions in their respective localities. These reports were assembled by the writer and copies were sent to each collaborator in order to disseminate information on the progressively northward spread of the disease, thus affording a means of anticipating the time of its appearance and probable severity in cucurbit producing areas." The 1947 season was characterized by the early establishment of the disease all along the Atlantic Seaboard. It appeared to spread inland more than usual, especially in Virginia, Pennsylvania, and upper New York. The disease caused considerable damage. However, the economic losses in some areas were minimized by a break in the market before the disease became serious. This was also the case with cantaloups in South Carolina and cucumbers in Delaware and Long Island. (PDR 32 (2): 44-48)

Mosaic (cantaloup mosaic virus). John T. Middleton reported that a two and one-half million dollar crop loss estimate was incurred in the 1946 melon harvest in southern California. In 1947 infection varied in cantaloups from 53 to 100 percent, in honeydews from 84 to 100 percent. A survey showed that virus infection in Yuma, Arizona was similar to that in the Imperial Valley of California. In the Palo Verde Valley heavy losses were incurred, some on cantaloups but primarily on honeydews. Both the pea and melon aphids are efficient vectors. The striped and spotted cucumber beetles are less efficient than the aphids. A number of weeds harbor the cantaloup mosaic. It was suggested that relief from the virus may be given if sulfur-resistant melon varieties are grown and given frequent sulfur applications for the control of aphids. (PDR 31 (10): 385-386)

IPOMOEA BATATAS. SWEETPOTATO:

Internal Cork (Virus). In Maryland R. A. Jehle reported that typical root symptoms of internal cork of sweetpotato were found in 23 percent of the roots in a storage house in Dorchester County, in 18 percent of the roots in one storage house and in 5 percent of the roots in another in Wicomico County. (PDR 31 (5): 189). D. E. Ellis reported the results of a survey in June and July, 1947 of the incidence of the internal cork disease in 31 North Carolina counties. This survey showed that the disease is generally distributed throughout the major sweetpotato producing areas in the State. However, it occurred in only 65 of the 176 samples collected, although mostly at a relatively low level. Of the 7,858 sweetpotatoes examined only 343 showed internal cork, 199 slightly affected, 181 moderately, and only 13 severely. (PDR 31 (11): 443-447)

LYCOPERSICON ESCULENTUM. TOMATO:

Bacterium solanacearum, bacterial wilt, was found in one home garden planting of tomatoes at Hope, Arkansas according to V. H. Young. This is the first report of this disease in the State in several years. (PDR 31 (7): 282)

Fusarium sp.. wilt. Douglas C. Bain described a local outbreak of Fusarium wilt of tomato in Mississippi following the hurricane that swept the Gulf Coast on September 18 to 19, 1947. "The fact that the vascular system of the wilted plants was discolored upwards several inches indicated that the plants had been infected prior to the storm but not to a degree of wilting. Various conditions that accompanied the storm, however, apparently predisposed the plants to sudden wilting." (PDR 32 (2): 48-50)

Galla australiensis, big bud virus, was reported on tomato in central California in San Joaquin County, by Donald M. Coe and George E. Altstatt. (PDR 31 (12): 478-479).

According to John T. Middleton (PDR 32 (3): 92), big bud apparently was recorded first from California in 1940. Since that time the disease has been observed in all subsequent years in varying percentages of infection. Big bud has been found in the following counties: Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. It has been noted on all varieties of tomatoes grown commercially in this area. It seems that the virus and the vector or vectors are generally distributed throughout southern California.

Phytophthora infestans, late blight. Paul R. Miller described the warning service for late blight which was established in February of this year to fill the acute need for accurate and timely seasonal information. This service operated primarily through key pathologists designated by the chief collaborators of the Plant Disease Survey to work with it in each cooperating State and Canada. The warning service area included the States east of the Mississippi River, and Minnesota, Iowa, Missouri, Arkansas, Louisiana, and Texas, and Provinces of Canada as far west as Manitoba. (PDR 31 (4): 140-143)

Tomato late blight in the warning service area in 1947 is summarized in Supplement 171 (pp. 191-236. Dec. 15, 1947). The reports and estimates of loss show that tomato late blight was much less widespread and caused loss loss in 1947 than in 1946. Hot dry weather was said to be responsible for the absence or small amount of late blight in the southern and western parts of the warning service area. In the Central Atlantic section where the disease was general and severe control applications reduced the loss.

In some States where the weather was not favorable to serious general occurrence fungicidal treatment was considered to be an important factor in preventing local outbreaks. The presence or absence of the tomato strain of Phytophthora infestans was another factor reported as influencing the amount of tomato late blight. This was of interest this year since southern grown transplants were not infected and could not have

been responsible for its spread northward. In Pennsylvania extensive carry-over was reported, 13 out of 25 isolates of P. infestans from potato tubers being of the tomato strain. The tomato strain was also isolated from potatoes grown in Indiana and Idaho. (See also under Solanum tuberosum)

Harold T. Cook reported the 1947 results of the late blight forecasting in eastern Virginia. Since over 60,000 acres were planted to potatoes and tomatoes in the State in 1947, the cost of spraying or dusting would have cost approximately $2,000,000. This amount of money could well be spent in a year such as 1946 when late blight was very destructive. It was possible for them to avoid this expense during the 1947 crop season with some safety since the late blight forecasts issued by the Plant Pathology Department of the Virginia Truck Experiment Station showed the weather was unfavorable for development of the disease. He states that the purpose of the forecasts is to eliminate needless spraying or dusting in years when blight is not important and to insure prompt and adequate protective measures in years when it threatens to cause serious damage. (PDR 32 (2):54-57. See also Phytopath. 38 (1): 6)

Stemphylium solani, gray leaf spot. According to R. W. Samson outbreaks of this disease in Indiana tomato canning fields were conspicuous and severe in August and September, 1947. The disease developed very suddenly, which attracted the attention of Indiana canners and fieldmen. The severe defoliation from Stemphylium probably reduced yields by 40 percent or more in local fields. This is perhaps the first reported record of the disease in Indiana. (PDR 32 (2): 51)

Blossom drop. Weather conditions contributed to an unusually large amount of this trouble during July in Utah; as a result there was a lighter fruit crop than usual in most fields in the State. (H. Loran Blood. PDR 31 (10) 366-367).

Mosaic (virus) was reported more prevalent than usual in Utah. From 2 percent to as high as 89 percent of the plants were infected. (H. Loran Blood, PDR 31 (10): 366-367)

PHASEOLUS LIMENSIS. LIMA BEAN:

Nematospora phaseoli. W. E. Cooper reported that this disease was collected by a grower in a local garden in Louisiana. The infection was associated with insect injury. This is the first report of this disease in Louisiana. (PDR 31 (10) 397)

PHASEOLUS VULGARIS. BEAN:

W. J. Zaumeyer and H. Rex Thomas reported 1947 bean diseases in Colorado, Wyoming, Utah, Montana, Idaho, Washington and Oregon. (PDR 31 (11): 432-442)

In Colorado a severe infection of bacterial blights (Xanthomonas phaseoli and Pseudomonas phaseolicola) was generally correlated with local rain or hail storms.

In Fremont County, Wyoming, bacterial wilt (Corynebacterium flaccumfaciens) was very serious. In the most serously affected planting, approximately 60 percent of the plants were dead or stunted.

In Oregon (Benton County) common and halo blights were severe on several snap bean varieties. P. viridifaciens was noted.

In Montana, common blight was widespread and serious in a large percentage of Great Northern and Pinto bean fields both of local and Idaho seed origin.

In Idaho a severe infection of Corynebacterium flaccumfaciens, bacterial wilt, the first to be reported from Idaho, was noted in a large field causing a considerable reduction in yield.

Sclerotinia sclerotiorum, white mold, was very serious in many of the Blue Lake fields in Lane and Marion Counties, Oregon. In many of the infected fields, 4 to 5 tons of beans were picked before they were abandoned, which is about 40 to 50 percent of a normal crop. The disease is becoming a serious factor in production in these counties.

Virus diseases. Greasy pod (virus) was found in a few fields in Colorado. In Wyoming the disease did not cause much reduction in loss. Greasy pod was again found fairly widespread in fields of many snap bean varieties in Idaho which are susceptible to common bean mosaic virus. All of those varieties resistant to the latter virus showed no greasy pod. In Oregon greasy pod was very serious in a large number of mosaic-susceptible varieties.

Black root (virus) in Idaho in 1946 and during the past season was observed on a number of common bean mosaic-resistant varieties and hybrids such as Idaho Refugee, Logan and Pioneer. One common bean mosaic-resistant hybrid with Great Northern U. I. No. 1 parentage was resistant to black root. Black root was not observed on any of the common bean-mosaic-resistant Great Northerns, Red Mexicans and Pinto Varieties. These observations confirmed several years' data, which showed the identity of the virus causing greasy pod and black root symptoms, respectively, on different groups of varieties.

Mosaic (virus). H. Loran Blood reported that all but 75 of 240 acres of beans planted for canning in the Cache Valley of Northern Utah were abandoned because of an outbreak of common bean mosaic and yellow bean mosaic. The common bean mosaic was about equally distributed throughout all the fields, while the yellow bean mosaic, which was the most destructive, was most prevalent around the borders and became less severe towards

the middle of the fields. Sweet clover, an important wild host of yellow bean mosaic, was abundant along the fence lines, ditches and roadsides. The extensive and rapid distribution of the viruses was probably accounted for by the large aphid population. (PDR 31 (10): 384)

SOLANUM TUBEROSUM. POTATO:

Actinomyces scabies, scab. Eddins and Foster reported that fields of Sebago and Chippewa potatoes growing in Florida muck were inspected when dug. About 10 acres of Chippewa had been ruined by scab and rhizoctonia (Rhizoctonia solani). The small tubers were numerous and few were free from scab. In adjoining rows Sebago potatoes were almost free of rhizoctonia. (PDR 31 (10): 376-377)

Erwinia carotovora, soft rot. Potato diseases observed in the Hastings area of Florida in 1947 were reported by A. H. Eddins. The most destructive disease seemed to be E. carotovora, which destroyed almost all of the tubers in fields totaling 500 acres following a 6-day period when the rainfall was 6 to 8 inches. Many tubers were also affected with internal necrosis. (PDR 31 (10) 375-376)

Phytophthora infestans, late blight. Thomas and Lane reported that late blight was observed on May 7, 1947 in cull piles in Weld County, Colorado. On July 3 a trace of seed-borne late blight was found in the field in Montrose County. This was the first time this disease had been observed in this semi-arid area. With less infected seed planted, elimination of cull piles and more active control programs it was hoped to hold late blight to a minimum in Colorado in 1947. (PDR 31 (8): 310-311). Early potatoes in a garden near Hagerstown, Maryland, were severely infected with late blight. Foliage of Solanum dulcamara (bitter sweet) growing as an ornamental in the same garden showed symptoms of late blight. (PDR 31 (8): 311-317).

W. D. Mills reported isolation of the tomato race of late blight overwintering on potato tubers in Pennsylvania. Blight infected tubers were obtained from 9 Pennsylvania counties. From 25 isolates 13 were of the tomato race and 12 of the potato race. (PDR 31 (6): 230). O. D. Burke reported the disease in nearly every county in Pennsylvania. (PDR 31 (9): 332)

Ralph E. Lincoln and R. W. Samson reported the isolation of the tomato strain of Phytophthora infestans in potato tubers grown in northern Indiana and in Idaho. It is believed that the occurrence of this tomato strain in these two States had not previously been reported. (PDR 31 (4): 145-146). See also under Lycopersicon esculentum.

Pythium rot of seed piece potatoes had not been observed in Maine before 1947, according to Donald Folsom. One grower in central Maine dug

up some of the seed pieces and found lesions on every piece. With better weather conditions suberization occurred and the rot was stopped. (PDR 31 (10): 377)

DISEASES OF SPECIAL CROPS

AGARICUS CAMPESTRIS. COMMON MUSHROOM:

Myceliophthora lutea, vert-de-gris. A disease of cultivated mushrooms that has caused severe losses for several years in southern Pennsylvania has been identified by T. F. Manns as identical with the vert-de-gris disease reported in France in 1894. In severe cases the losses would probably be as high as 50 to 75 percent. A special method for sterilizing soil and houses was showing much promise. (T. F. Manns, PDR 31 (11): 417-418)

ALEURITES FORDII, TUNG TREE:

John R. Large reported that Septobasidium, probably S. pseudopedicellatum, was observed on tung trees in two widely separated orchards in St. Tammany Parish, Louisiana. So far as is known this fungus has not previously been reported on tung. (PDR 31 (8): 317)

GROSSYPIUM HIRSUTUM. COTTON:

Ascochyta gossypii, "wet weather canker", was wide spread and caused serious damage on cotton in Georgia during the last week of June. According to B. B. Higgins reports and specimens were received from eight counties and the disease was found active in every cotton field visited. Later its prevalence was reported throughout the northern half of the State. The disease was recorded in Georgia in 1915, 1922, 1940, 1947. Cotton was planted several weeks later than normal, and the cool weather caused the plants to be severely damaged by insects. Owing to their weak condition, the damage done in 1947 appears to be more severe than any previous year. (PDR 31 (8): 299). Julian H. Miller also reported that during a survey from Banks County southward through Jasper County losses of as high as 30 percent dead or dying plants were observed in some fields. The disease did the most damage to the early plantings in the southern part of the State, where the plants were making slow growth. Low temperatures with frequent showers during April and May favored the development of the epidemic. (PDR 32 (4): 132). A. L. Wilson and Coyt Wilson reported Ascochyta blight widespread throughout Albama in 1947. Losses varied from slight reductions in stand to complete loss of the crop. (PDR 32 (4): 132)

Phymatotrichum omnivorum, root rot. D. C. Neal reported that on August 12 cotton plants affected with root rot were found in a field near Bossier City in Bossier Parish. This was the first time this disease had been found in Louisiana. From August 26 - 28 an extensive survey was made for evidence of the disease. One other infested field was found near Dixie, in Caddo Parish. An estimated 30 acres of land was infested on

the farm near Bossier City and 3 1/2 or 4 acres in the field near Dixie. (PDR 31 (11): 416)

Verticillium alboatrum, Verticillium wilt. S. G. Lehman and Howard Garriss reported the discovery and distribution of Verticillium wilt in North Carolina in 1947. The disease was found in seven counties. Apparently, aside from Carpenter's report in 1914 of finding the disease on two cotton plants at Arlington, Virginia, this is the first evidence of the disease on cotton east of Tennessee and Mississippi. (PDR 32 (3): 88-91)

P. J. Leyendecker et al. reported on a survey for Verticillium wilt of cotton in Mesilla Valley, New Mexico. The disease appeared late, consequently the damage to plants and reduction in yield were less than in some seasons. The disease was more widely distributed this year than in 1944 when it appeared to cause serious damage. (PDR 31 (12): 483-484)

MENTHA SPP. MINT:

E. C. Stevenson reported observations on mint diseases in the principal mint growing areas in 1947. These areas included northern Indiana, southern Michigan, south-central and western Washington and western Oregon.

Puccinia menthae, rust, in late July attacked spearmint in Indiana and growers were forced to cut early. Spearmint was practically defoliated in fields where cutting was delayed after the rust became widespread.

Verticillium wilt was serious again this year in Michigan. Production in the St. John's area, at one time an important peppermint growing section, has been declining rapidly because of wilt. Many growers in this area have resorted to producing spearmint. However, some of the spearmint fields were rather severely damaged by Verticillium wilt in 1947 and growers were forced to cut early to save their crops. (PDR 32 (2): 68-69)

NICOTIANA TABACUM. TOBACCO:

Erwinia aroidese, hollow stalk, was quite common in Kentucky according to Valleau and Johnson. A few affected plants could be found in nearly any field after topping, and some growers reported over 50 percent of the plants with hollow stalks and the lower leaves falling off. (PDR 31 (11): 427-431)

Peronospora tabacina, blue mold, was reported by James Johnson as a field disease on half-grown tobacco in Dane and Columbia Counties, Wisconsin. A field survey of the surrounding district located the disease on 27 farms. The affected section apparently corresponded to a region in which precipitation occurred July 12-13, associated with very

Figure 4. Tobacco (Nicotiana tabacum) blue mold (Peronospora tabacina) distribution in 1947.

humid weather, followed by relatively warm days and cool nights. This is the first observation of blue mold from Wisconsin. Although blue mold was first found during the 1947 season on Wisconsin farms it did occur in November 1945 at the station greenhouses. Apparently the seedlings picked up the spores while exposed outdoors. (PDR 31 (11): 419-420) In Georgia John G. Gaines reported blue mold was more destructive in flue-cured tobacco beds than in any previous year. Approximately 95 percent of unprotected and untreated plants were killed by cold and mold. In many instances mold killed over 95 percent of plants protected from cold. A shortage of

fungicides interrupted spray and dust schedules. Because of this interruption, cold complications, and inefficient application, at least 75 percent of the flue-cured plants were lost. However, enough plants were left to set substantially all the alloted acreage before May 1. Blue mold caused slight damage in the cigar wrapper area of Southwest Georgia. No beds in the flue area escaped, whether new or old. (PDR 31 (7): 275-280)

Massachusetts experienced one of the lightest years for blue mold damage to seed beds since the disease appeared there in 1937. Blue mold became widely distributed in Maryland but did not cause serious losses. Distribution in Virginia was general, but little actual damage occurred because of dry, hot weather. In North Carolina a survey conducted April 21-23 showed blue mold to be generally distributed over the eastern part of the State as far north as Nash County and west into lower Piedmont Counties. By May 12 the disease was scattered throughout the flue-cured belts and had been reported at two locations in Yancey County of the Burley area. In the new areas damage was slight. Blue mold was quite prevalent in Burley tobacco fields in the vicinity of Waynesville, Haywood County, North Carolina, definite damage occurred. In South Carolina blue mold caused severe damage in some untreated beds. In the flue-cured area of Florida blue mold was generally distributed by March 15. Distribution in Kentucky was general. Most of the first reports were in second-year beds, indicating carry over from the previous year. There was no evidence of blow-in from the South or Southeast. By June 12 blue mold was widespread in Tennessee but sudden changes in the weather arrested further development. In Texas in early March Nicotiana repanda was heavily infected, with sporulation abundant. For distribution of blue mold in 1947 see Figure 4.

T. E. Smith reported that wind-borne inoculum seemed implicated as the means of spread of tobacco black-shank (Phytophthora parasitica var. nicotianae) in one North Carolina instance. (PDR 31 (3): 120)

Blackshank was found in three additional counties in Virginia during 1947, namely Dinwiddie, Brunswick and Amelia, and is now known to be present in eleven Virginia counties including these three and Pittsylvania, Mecklenburg, Charlotte, Franklin, Lunenburg, Patrick, Nottaway, Cumberland. (PDR 32 (1): 16-18)

Thielaviopsis basicola, black root rot, was reported by Valleau and Johnson to be very severe in susceptible varieties because of the cool, wet season following setting. (PDR 31 (11): 427-431)

DISEASES OF FRUIT CROPS

FICUS CARICA. FIG:

Mosaic (Virus). A fig mosaic typical of that described from California by Condit and Horne was found this spring in gardens in Macon, Georgia, according to the report of Kenneth H. Garren.

The owner of one of these gardens first noticed the condition in 1946, when only one plant of the variety Celeste appeared diseased. Adjacent Green Ischia and Brown Turkey bushes had also developed the disease by April 1947. The disease was prevalent on Brown Turkey bushes in an adjoining garden and has also been found on Brown Turkey bushes located one mile from these gardens. Since all the diseased bushes reported were apparently of local origin, it would seem that a mosaic disease has become established and is spreading in Georgia-grown fig bushes. (PDR 31 (8): 300-301)

FRAGARIA SP. STRAWBERRY:

"Witches'-broom" (Virus). George M. Darrow reported that the "multiplier" trouble in the Bayfield area of northern Wisconsin closely resembles the "witches'-broom" virus disease described by Zeller in Oregon. (PDR 32 (1): 8)

PRUNUS SPP. CHERRY:

Little cherry disease. E. C. Blodgett et al. reported that the little cherry disease recognized in Washington first in 1946 in four orchards in three sections of the State was found to be widely scattered according to the 1947 survey. A total of 172,078 bearing cherry trees (about one-third of the State's total) was examined on 2,458 properties in 16 counties east, and in 5 west, of the Cascade Mountains. A total of 289 infected properties was located in 13 counties east of the Mountains, which represent a total of 1,471 trees affected or less than 1 percent of those examined. It is believed that the disease had been in the State about five years. Control of the disease was being attempted with a voluntary tree removal program. (Phytopath. 38 (1): 2)

PRUNUS AVIUM. SWEET CHERRY:

Virus diseases. M. M. Afanasiev and H. E. Morris reported on diseases of sweet cherries in western Montana during the summers of 1946 and 1947. During the survey the following viroses were found on sweet cherries: mottle leaf, rusty mottle, and rasp viroses were present in traces, but the ring-spot and lace-leaf complex viroses occurred on more than 10 percent of the trees surveyed. Crinkle was found on a number of trees. Evidence of the deep suture disease was also present. Some other diseases and disturbances were also noted. (PDR 32 (1): 3-4)

PRUNUS CERASUS. SOUR CHERRY:

Glomerella cingulata, bitter rot, was reported in Jefferson County, West Virginia, by Carlton F. Taylor and Clyde E. Peet on sour cherry. In two orchards where the rot was most severe the poorest air drainage existed. Preceding and during cherry harvest, the weather was unusually wet. This seems to be the second report of this disease in the U. S. on sour cherry. A mycological collection was made in Indiana in 1915. (PDR 31 (10): 392-393. See also Phytopath. 38 (1): 20)

X-disease of sour cherry. In New York according to K. G. Parker and D. H. Palmiter in 1947, in the more severely affected part of one orchard 110 of 160 English Morello trees examined bore no fruit at all and 15 others bore a high proportion of immature fruit. In the same part of this orchard, 11 of 87 interplanted Montmorency trees bore no good fruit and 38 others bore partly poor fruit. When a careful study was made, chokecherry showing X-disease symptoms was observed within a few hundred feet of the affected cherry trees. (PDR 32 (5): 188-190. See also Phytopath. 38 (1) 20)

PRUNUS PERSICA. PEACH:

Bordeaux injury. In spraying for blight (Coryneum carpophilum) and dieback before the fall rains started, it was found that Bordeaux mixture was the probable cause of lesions on new wood of peach trees according to evidence reported by Adin P. Steenland from Oregon. (PDR 32 (2): 62-63)

Glomerella cingulata, anthracnose. According to G. B. Ramsey et al. during July 1947, Georgia peaches arriving on the northern market showed an unusual type of decay never before observed in commercial shipments. In some carloads up to 12 percent of this rot was found in various stages of development. Brown lesions 1/4 to 3/4 inches in diameter were most common. Numerous isolations from typical lesions always yielded pure cultures of Glomerella cingulata. Inoculation experiments showed the organism to be pathogenic to peaches, apples, pears and plums without evident wounds as well as through wounds. (Phytopath. 38 (1): 22)

Monilinia fructicola, blossom blight. John C. Dunegan and M. C. Goldsworthy reported the effect of blossom blight control on the amount of fruit brown rot at harvest time. Results of the blossom blight spraying experiments indicated that where there is a reduction in the number of blighted blossoms there was also a reduction in the number of infected fruit at harvest time. (PDR 32 (4): 136-137)

Donald Cation reported a severe epidemic of brown rot blossom blight in early June on peaches in Southwestern Michigan. In three counties there was a loss of 85 to 90 percent of blossoms. He also reported leaf curl

(Taphrina deformans) very severe in unsprayed peach orchards. (PDR 31 (7): 269-270)

Xanthomonas pruni, bacterial spot, caused very severe defoliation in a 100-acre planting of 2-year old peach trees near Nashville, Arkansas, according to V. H. Young. (PDR 31 (7): 282)

Heterodera marioni, root knot. C. N. Clayton reported that greenhouse data and observations in the orchards in North Carolina suggest that nematode races rather than individual plant reactions seem to be responsible for observed variation in resistance of Shalil peach seedlings to root knot (Heterodera marioni). (PDR 31 (4): 153-154)

Winter injury. A considerable number of peach trees died from winter injury in the largest Arkansas peach area near Nashville, according to V. H. Young. (PDR 31 (7): 282)

PRUNUS SALICINA. JAPANESE PLUM

Xanthomonas pruni, bacterial spot, appeared in a severe form on the fruits in a 20-acre planting of Japanese plums near Prescott, Arkansas, according to V. H. Young. (PDR 31 (7): 282)

PYRUS COMMUNIS. PEAR

Erwinia amylovora, fireblight, occurs every season in the pear orchards of the Wenatchee district according to Theodore R. Wright. 1947 was the first year in 25 that the disease had been serious. This year weather conditions did not force the organism to become dormant; blight increased very rapidly, and a new problem of blight of nearly mature fruit arose. Blight sometimes occurred on fruits on trees having no observable sources of infection. This condition became a matter of concern particularly to handlers and processors. An investigation was made, the results of which showed that infection of pear fruit by the blight organism was of little consequence, once the fruit had left the trees. (PDR 32 (2): 58-61)

RUBUS SPP. CANE FRUITS:

Blackberry: Kuehneola uredinis, cane rust, was reported by George M. Darrow to have become more prevalent during the past few years at the testing grounds, Plant Industry Station, Beltsville, Maryland, possibly because of new strains of the fungus. (PDR 32 (1): 5-6)

Raspberry: Erwinia amylovora, bacterial twig and blossom blight, of raspberry was reported in Maine by Donald Folsom. S. G. Lehman reported the disease in North Carolina in 1932, and again in June 1947. (PDR 31 (9): 324)

Mild streak. According to Jeffers and Woods mild streak, a disease apparently of virus nature, is the most serious trouble affecting black raspberries in Maryland. This disease was first observed in Maryland about 1935 and since that time has increased to such an extent that nearly all plantings in the State are affected. (Phytopath. 38 (3): 222-225)

Plasmopara viticola, downy mildew, according to G. H. Boewe, was much more prevalent on grapes in Illinois in 1947 than in an average year. On cultivated grapes the disease was probably statewide. Severity varied with the varieties, type of treatment, and location. In central and northern Illinois it was very prevalent on wild grapes. The weather seemed to have favored its development in 1947. (PDR 31 (10): 392-393)

DISEASES OF NUT CROPS

According to P. W. Miller, reporting on the incidence of walnut and filbert diseases in Washington and Oregon in 1947 (PDR 32 (1): 6-8), the bacterial blights of both crops were widespread and important.

Xanthomonas corylina, bacterial blight, of filbert occurred in practically all orchards. In orchards 2 to 3 years old many trees died.

Xanthomonas juglandis, walnut blight, was widely distributed. An estimated 20 percent of the crop in non-sprayed orchards was either destroyed or affected by the disease. It was most destructive in the Willamette Valley in Oregon.

DISEASES OF ORNAMENTALS

AZALEA:

T. J. Nugent reported petal blight (Ovulinia azaleae) in the Norfolk area of Virginia for the first time on May 8, 1947. (PDR 31 (6): 244)

Phytophthora cinnamomi, root rot. C. M. Tucker and C. T. Gregory reported Azalea root rot in two greenhouses in the St. Louis area of Missouri. In both cases it had been present for some time and was first noticed in plants from the South. The disease was not present when homegrown cuttings were used. Ten percent of the plants were lost this year and there was evidence that the losses were increasing.

This is the first record of occurence of the fungus on azalea in the St. Louis area, but the species has previously been noted as a parasite of azalea in other regions. (PDR 31 (3): 111-113)

BEGONIA SP.

Phytomonas (Xanthomonas) begoniae, leaf spot, developed to a severe extent in a large commercial house at Houston, Texas, according to E. M.

Hildebrand. In past years this leaf spot has been serious on winter begonias grown in greenhouses in the United States, England and Portugal where overhead watering had been used, as happened in this case. (PDR 32 (1): 19)

CALENDULA OFFICINALIS. POT MARIGOLD:

Puccinia flaveriae, rust. According to E. M. Hildebrand and W. L. Vitopil a sudden severe outbreak occurred in a cloth house at Texas A. and M. College at the end of October. Numerous leaf lesions appeared almost overnight and affected leaves soon dried up. The entire bed was sprayed once on November 1, with Fermate, 2 pounds per 100 gallons, using 6 gallons to cover the 200 square feet. No new lesions were observed. However, about two weeks later a change in weather took place, with considerable drop in temperature, rains and cloudy skies. Since there were no unsprayed plants for comparison it was not possible to conclude that the practically perfect control was due entirely to the fungicide and not partly to the changed weather conditions. (PDR 32 (1): 13-15)

CHRYSANTHEMUM SPP. CHRYSANTHEMUM

Foliar nematode, probably Aphelenchoides ritzema-bosi. In July 1947 E. M. Hildebrand reported a sudden outbreak of a leaf spot or blight on chrysanthemum in a Texas greenhouse. An abundance of nematodes was found in the lesions of the foliage when examined microscopically. (PDR 32 (1): 19)

COLCHICUM AUTUMNALE. AUTUMN CROCUS:

Botrytis elliptica, the cause of a well-known leaf rot and spot of Lilium spp. was observed on two non-lily hosts in western Washington in 1947, according to Neil Allan MacLean. The newly noted hosts are autumn crocus and Gladiolus spp. (Phytopath. 38 (9): 752-753)

FICUS ELASTICA. INDIA-RUBBER FIG:

Clitocybe tabescens, mushroom root rot. In Florida Arthur S. Rhoads reported a case of mushroom root rot in a stock planting of India-rubber fig, where it had been observed for about two years. The disease was said to be becoming progressively worse and it was estimated to have killed 20 to 25 percent of the original stock planting. By January 1947 the disease had become so severe that growing these plants in this particular location was no longer profitable. (Phytopath. 37 (7): 523-524)

FORSYTHIA VIRIDISSIMA. GOLDEN BELL:

Sclerotinia sclerotiorum, twig blight, was found on golden bell in the spring, in the vicinity of Durham, North Carolina according to

Frederick A. Wolf. This organism is of especial interest because of its world wide distribution and its wide suscept range. Literature was searched for records of its pathogenesis to woody plants. These records disclosed that this fungus has been noted to cause a blight of twigs and larger branches of citrus in Chile, Palestine, New South Wales, and California; and a twig blight of figs in Texas and Chile; of guayule in California; of apricot in South Africa; and of Camellia japonica in Chile. (PDR 31 (9): 325)

GLADIOLUS SPP:

Curvularia spot, possibly C. lunata, a new disease of gladiolus, caused considerable losses in the varieties Picardy, Corona, and Vredenburg in commercial areas of Florida, according to Robert O. Magie. The disease was also reported from Alabama where it caused much damage during the summer. In fields with severe leaf spotting growers seemed to have controlled the disease by frequent sprays of Dithane with zinc and lime. (PDR 32 (1): 11-13) See also under Colchicum autumnale

ROSA SPP. ROSE:

Mycosphaerella rosigena, leaf spot, was reported by D. E. Ellis and C. N. Clayton on rose plants in commercial greenhouses in Raleigh, North Carolina in the fall of 1947. The plants were severely affected. (PDR 32 (1): 9-10)

TULIPA SP. VAR. WILLIAM PITT:

Rhizoctonia solani. Neil Allan MacLean reported that in January 1947 a greenhouse planting of William Pitt tulips from Spokane, Washington showed a top rot bulb infection. The injury was so severe that 7,000 out of 15,000 bulbs were either destroyed or injured to the extent that they did not produce marketable flowers. The causal agent appeared to be R. solani Kuehn. (Phytopath. 38 (2): 156-157)

DISEASES OF TREES

ALBIZZIA JULIBRISSIN. MIMOSA:

Fusarium oxysporum f. perniciosum, wilt, of mimosa has been found near Silver Spring, Maryland, according to Curtis May. Three trees standing within 50 feet of one another have died from the disease this year, and it was said that one tree with similar symptoms died in 1946. The disease has been very destructive in the Southeast. (PDR 31 (9): 326)

Distribution of mimosa wilt as known in 1947 is reported by E. Richard Toole. It occurred in 82 counties in 6 States, as far north as Montgomery County, Maryland, and southwest to Pike and Tallapoosa Counties, Alabama. (PDR 32 (2): 67)

BETULA SPP. BIRCH

J. R. Hansbrough and Donald C. Stout reported virus like symptoms accompanying dieback of birch in Maine. (PDR 31 (9): 327)

CRATAEGUS MOLLIS. HAWTHORN:

Gymnosporangium globosum, hawthorn rust. Roy A. Young and George L. McNew reported a severe loss in a stand of hawthorn seedlings growing in a nursery at Ames, Iowa, in 1947. Counts made in October showed that only 2 out of 18 plants per foot had survived the summer. Two rows of red cedars nearby, used as a wind break, were heavily infected with G. globosum and G. juniperi-virginianae. Infection and destruction of plants were most severe in the area nearest to the cedars. In Iowa during the spring of 1947 weather conditions were ideal for infection of hawthorn by G. globosum. (PDR 31 (12): 484-486)

MAGNOLIA GRANDIFLORA. MAGNOLIA

Glomerella cingulata, leaf spot. According to Marvin Fowler this spot is prevalent on older foliage of M. grandiflora in the South. Collections of this leaf spot have been made on native and planted Magnolias in South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas. All collections were made in the natural range of the magnolia. (PDR 31 (7): 298)

PLATANUS ACERIFOLIA. LONDON PLANE:

Endoconidiophora sp., canker stain. This destructive disease of London plane was reported by T. W. Bretz and C. M. Tucker in two widely separated locations in St. Louis, Missouri, a location far from previously reported centers. It is not known how the fungus could have reached St. Louis. The causal organism could have been brought on contaminated pruning tools or tree working equipment from some distant place. (PDR 32 (2): 65-66)

ULMUS AMERICANA. ELM:

Phloem necrosis (virus). J. E. Livingston reported that phloem necrosis of American elms has been found in Lincoln, Nebraska, the most northwestward point of advancement of the disease. About fifteen trees have died. The disease has also been observed in Richardson and Lancaster Counties. (PDR 31 (9): 328)